



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/623,970      | 07/21/2003  | Ulysses Gilchrist    | 390-011009-US (101) | 5343             |

2512 7590 10/02/2006

PERMAN & GREEN  
425 POST ROAD  
FAIRFIELD, CT 06824

EXAMINER

LOWE, MICHAEL S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3652

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



|                              |                               |                                  |  |
|------------------------------|-------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/623,970 | Applicant(s)<br>GILCHRIST ET AL. |  |
|                              | Examiner<br>M. Scott Lowe     | Art Unit<br>3652                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11, 13-17, 19, 20, 22 and 24-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-17, 19, 20, 22, 24-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |



***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/30/06 has been entered.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5,7-10,13, are rejected under 35 U.S.C. 102(b) as being anticipated by Mages (US 5,772,386).

Re claims 1, Mages teaches a substrate processing apparatus having a station for loading and unloading substrates from the apparatus, the station comprising: an aperture closure 12,87 for sealing a loading and unloading aperture of the station; apparatus (figures 1,4-8,etc.) for removing a door 15 of a substrate magazine 6,46 and thus opening the substrate magazine 6 and for operating the aperture closure 12 to open the aperture; and



Art Unit: 3652

an elevator 5,56 for precisely positioning the open substrate magazine 6 along a vertical axis within a usable range of motion.

Mages teaches a buffer transport 5,7,53,54,55 for positioning one or more substrate magazines 6 along a second axis (various) oriented in a second direction (various).

Mages teaches (figures 10,11) a shuttle 5,7,53,54,55 for transporting the one or more magazines 6 along a third axis (various) oriented in a third direction (various) different from the first and second directions and wherein the buffer transport is operative for moving the substrate magazine between a first position and a second position, wherein when in the first position the substrate magazine communicates with the aperture, and when in the second position the substrate magazine is offset from the first position and is buffered, and wherein the first and second positions are horizontally coplanar.

Re claim 2, Mages teaches the elevator 5 operates such that a substrate within the open magazine 6 is positioned substantially in a wafer transport plane 10, the substrate processing apparatus further comprising a transport apparatus 22 for accessing the substrate in the wafer transport plane 10 through the aperture.

Re claim 3, Mages teaches the elevator 5 includes a device 5,11 for positioning the open substrate magazine 6 such that substantially no vertical movement is required by the transport apparatus.

Re claim 4, Mages teaches the first and second positions substantially coplanar with a plane that includes the second axis.



Re claim 5, Mages teaches at least one peripheral area and a central area (see figures, inherent also).

Re claim 7, Mages teaches the buffer transport 5,7 is operable to place the one or more magazines 6 in the at least one peripheral area (not numbered) and the central area (not numbered).

Re claim 8, Mages teaches the elevator 5 is operable to move the one or more magazines 6 placed in the central area.

Re claim 9, Mages teaches the station further comprises a sensor 21 for mapping vertical locations of the substrates.

Re claim 10, Mages teaches the sensor 21 is mounted to a frame (not numbered) of the station and capable of mapping the vertical location while the elevator is precisely positioning the open substrate magazine along the vertical axis.

Re claim 13, Mages teaches a mini-environment (not numbered, see figure 1, etc.) for interfacing the station to the substrate processing apparatus.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mages (US 5,772,386).



Re claim 11, Mages teaches the sensor 21 but is silent as to its mounting. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sensor mounted in any equivalent known fashion and to any pad of the device as long as it still could perform its function for aesthetic reasons.

Furthermore, on page 14, lines 17-19, applicant supports this rejection by stating "sensor 245 may be mounted in any orientation at any location so long as sensor 245 is capable of scanning substrates present inside magazine".

Claims 11,14-17,19-20,22, 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mages (US 5,772,386) in view of Gordon (US 6,013,920).

Re claims 11,14,24,16, Mages teaches a substrate processing apparatus having a station for loading and unloading substrates from the apparatus, the station comprising:

an aperture closure 12 for sealing a loading and unloading aperture of the station; apparatus (figures 1,4-8) for removing a door 15 of a substrate magazine 6 and thus opening the substrate magazine 6 and for operating the aperture closure 12 to open the aperture; and  
an elevator 5 for precisely positioning the open substrate magazine 6 along a vertical axis within a usable range of motion.

Mages teaches a sensor 21, that is also an encoder, mounted on the elevator 5 (through 3) for providing elevator vertical position information.



Mages teaches the sensor 21 but is silent as to its mounting. Gordon teaches a sensor 86, mounted to the magazine door drive 42 (48) for easily mapping vertical locations of the substrates (column 5, line 62 to column 6, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sensor mounted to the magazine door drive 42 (48) for mapping vertical locations of the substrates or for aesthetic reasons.

Mages teaches a magazine door drive 12, 32 (or 94) but does not state explicitly the type of drive 32 other than it is a cylinder. Columns 6-7 Mages states that suitable drives or cylinders for moving doors and other items are pneumatic fluidic drives. Furthermore, cylinder drives are usually fluidic drives. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the drive be any known drive, such a fluidic pneumatic drive, in order to save the expense of developing a new type of drive and also to have all the drives to be of the same type for ease of maintenance.

Re claim 15, Mages as modified by Gordon teaches a through-beam sensor.

Re claims 17,20, Mages teaches the sensor 21 is mounted to a frame (not numbered) of the station and capable of mapping the vertical location while the elevator is precisely positioning the open substrate magazine along the vertical axis.

Re claim 19, Mages teaches the substrate locations are determined by recording the elevator vertical position information when the sensor 21 detects an individual substrate.



Re claims 22, Mages teaches the substrate locations are determined by processing the magazine door drive position information when the sensor 21 detects an individual substrate.

Re claim 25, Mages teaches a substrate buffer for temporary substrate storage.

Re claim 26, Mages teaches at least one peripheral area and a central area (see figures, inherent also).

Re claim 27, Mages teaches the buffer transport 5,7 is operable to place the one or more magazines 6 in the at least one peripheral area (not numbered) and the central area (not numbered).

Re claim 28, Mages teaches a mini-environment (not numbered, see figure 1, etc.) for interfacing the station to the substrate processing apparatus.

### ***Conclusion***

Applicant's arguments filed 6/30/06 have been fully considered but they are not persuasive.

Applicant argued about the finality of the previous office action, however since applicant has filed an RCE, the argument is moot.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant merely states that the claims are different than what is found in the references. The length of the arguments is not the issue. There are not specific



Art Unit: 3652

arguments regarding specific elements alleged to be absent from the prior art references throughout much of the remarks section (these are the sections that are being referred to here). Applicant stated that both the shuttle and buffer transport are associated with the same set of reference numbers. As currently broadly claimed both the shuttle and buffer transport read on the any of the same group of reference items. For sake of a full rejection of the claims, all the applicable items must be referenced. If applicant feels particular items do not apply for a limitation, then applicant should clearly state arguments accordingly. As for arguments regarding the axes, there are no reference numbers for the axes in the reference and also as currently broadly claimed; various axes could apply to each limitation. The argument appears to be moot anyway according to applicant stated that he does not want to concentrate on this issue and neither accepts nor denies "the conclusions drawn by the examiner."

Applicant argues that the examiner has not addressed the "wherein" limitations of claim 1. However, these are addressed as shown in the above rejections and furthermore applicant's own remarks in regards to figures 1 & 11 (columns 4-6) of Mages clearly show these limitations are found in the cited prior art.

Applicant argued that neither Mages nor Gordon teaches a fluidic door drive and that it would not have been obvious to add one since Gordon has a lead screw drive and associated sensor. Gordon teaches placing the sensor on the door drive, but Mages teaches the sensor and fluidic drives.

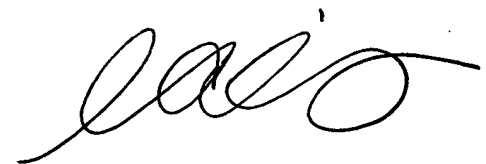


Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Scott Lowe whose telephone number is (571) 272-6929. The examiner can normally be reached on 6:30am-4:30pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

msl



**EILEEN D. LILLIS**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600